



Avista Corp.
1411 East Mission P.O. Box 3727
Spokane, Washington 99220-0500
Telephone 509-489-0500
Toll Free 800-727-9170

August 29, 2013

Jean D. Jewell, Secretary
Idaho Public Utilities Commission
Statehouse Mail
W. 472 Washington Street
Boise, Idaho 83720

AVU-E-13-08

RECEIVED
2013 AUG 30 AM 10:45
IDAHO PUBLIC
UTILITIES COMMISSION

RE: Avista Utilities Application to Fund Selected Research and Development Efficiency Projects

Dear Ms. Jewell:

Enclosed for filing with the Commission is an original and 7 copies of Avista Corporation's dba Avista Utilities ("Avista or the Company") application requesting to accumulate and account for customer revenues that will provide funding for selected electric energy efficiency research and development (R&D) projects, proposed and implemented by the state of Idaho's four-year Universities.

The Company requests that this filing be processed under the Commission's Modified Procedure rules.

Please direct any questions regarding this report to Bruce Folsom at (509) 495-8706 or myself at 509-495-4975.

Sincerely,

Linda Gervais
Manager, Regulatory Policy
Avista Utilities
509-495-4975
linda.gervais@avistacorp.com

Enclosure

DAVID J. MEYER
VICE PRESIDENT AND CHIEF COUNSEL FOR
REGULATORY AND GOVERNMENTAL AFFAIRS
AVISTA CORPORATION
P.O. BOX 3727
1411 EAST MISSION AVENUE
SPOKANE, WASHINGTON 99220-3727
TELEPHONE: (509) 495-4316
david.meyer@avistacorp.com

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IDAHO PUBLIC
UTILITIES COMMISSION

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION)
OF AVISTA CORPORATION TO FUND)
SELECTED RESEARCH AND DEVELOPMENT)
EFFICIENCY PROJECTS)

CASE NO. AVU-E-13-08

APPLICATION OF AVISTA CORPORATION

I. INTRODUCTION

Avista Corporation, doing business as Avista Utilities (hereinafter Avista or Company), at 1411 East Mission Avenue, Spokane, Washington, respectfully proposes to accumulate and account for customer revenues that will provide funding for selected electric energy efficiency research and development (R&D) projects, proposed and implemented by the state of Idaho's four-year Universities. A key purpose of this program is to provide a stable base of research and development funding that will allow participating research institutions to sustain quality research programs that can be shaped to benefit customers.

This application is intended to be consistent with Idaho Governor Butch Otter's Idaho Global Entrepreneurial Mission "iGem" initiative in which industry would provide R&D funding to supplement funding provided by the State of Idaho.¹

Avista proposes \$300,000 per year of revenue be allocated to research from the Company's Schedule 91, "Energy Efficiency Rider Adjustment" tariff. Avista is not requesting an additional change in the Schedule 91 funding.² Avista's tariff Schedule 91 is "trued up" on an annual basis to match revenues with expenses.

The Company is seeking authority to recover the R&D costs through Schedule 91 pursuant to the terms included in this application.

¹ The purpose of the iGEM "is to leverage private-industry guidance and the talent and expertise of Idaho's research universities to commercialize innovative and viable technologies that will strengthen Idaho's economy. IGEM creates a platform to facilitate and accelerate the transfer of technology out of world-class research facilities and into the private sector."
<http://www.idahotechcouncil.org/sites/all/sites/default/files/files/IGEM%20Flyer%20Final.pdf>

² On August 1, 2013 the Company filed a request to increase Schedule 91 rider rates by 1.2%, Case No. AVU-13-05-E, as part of its annual true-up.

This application consists of:

- A description of the need for this proposed program;
- a list of primary customer-service and secondary technical objectives;
- an overview of the proposed program; and
- program governance.

The Company requests that this filing be processed under the Commission's Modified Procedure rules.

Communications in reference to this Application should be addressed to:

David J. Meyer, Esq.
Vice President and Chief Counsel for
Regulatory and Governmental Affairs
Avista Corporation
P.O. Box 3727
1411 E. Mission Avenue, MSC-13
Spokane, WA 99220-3727
Phone: (509) 495-4316
david.meyer@avistacorp.com

Linda M. Gervais
Manager, Regulatory Policy
Avista Corporation
P.O. Box 3727
1411 E. Mission Avenue, MSC-29
Spokane, WA 99220-3727
Phone: (509) 495-4975
linda.gervais@avistacorp.com

II. BACKGROUND

In the 1990s, with the prospect of electric deregulation, utilities reduced or eliminated budgets that would increase costs not included by third-party marketers for sales of power to end-users. Research and development was one of those costs. This has led to the utility industry having the lowest R&D share of net sales among all US industries. The utility industry R&D funding as a percentage of total sales is 0.1%; the US industry average is 3.5%.³ Avista's spending for R&D included in Idaho rates as recoverable expense was \$196,000 in 2012, or 0.08% of Idaho total electric retail revenue

³ National Science Foundation. Appendix Table 4-14 "Company and other (nonfederal) R&D fund share of net sales in R&D-performing companies, by industry and company size: 2003-2007" This is the most recent available data.

of \$253,434,000. These costs are defined by payments provided to third-party entities and do not represent time dedicated by Avista employees to monitor R&D in the industry.

Research and development is defined, for the purpose of this proposal, to be applied R&D that could yield benefits to customers in the next one to four years. This is the period between "operationalizing" (or commercializing) new technology/systems and basic (or theoretical) research which may produce benefits in a time period over four years into the future. The nature of applied R&D is such that some projects would likely be implemented on a utility's system, however not all. Avista's funding of \$196,000 in Idaho in 2012 was composed of payments to three organizations: the Electric Power Research Institute, E-Source, and the Northwest Energy Efficiency Alliance.⁴ Avista has supported some research outside of customer rates; however this has been an exception.

The proposed additional funding of \$300,000 per year would represent a customer bill increase of approximately 0.1% or one-tenth of one percent for a residential customer using 930 kWh per month. The monthly bill increase would be approximately \$0.08 or approximately \$1.00 annually.

In 2010, Governor Otter announced Idaho would support university research as a policy initiative with some funding provided by the state and supplemental funding expected from other sources. This proposal would provide additional funding to selected research.

Nationally, there a number of electric utility organizations – for both public and private utilities – that promote electric efficiency research and development. The question might be asked as to why additional resources should fund research and development

⁴ EPRI budget is considered to be 100% research; E-Source is 50%; and NEEA is 20%

projects on a local scale, as proposed here, when these larger research programs could be funded with little or no organizational effort. While we do see large-scale organizational research as important on a national scale, there are limitations to what can be accomplished through participation in these efforts alone. Large-scale solutions are often generalized over broad issues that may apply to many regions at the highest level, which may not be pertinent to electric customers in Idaho. Large-scale research programs and solutions are often not ‘off-the-shelf applicable’ because they cannot be fully developed or tailored to the unique nature and needs of a local utility. And, at times, the costs of membership in these organizations are not justified by the research and development return on our customers’ investment.

At the same time, there are benefits to organizing more-local and directed research and development initiatives, which include the collaborative development of tailored, long-term utility plans. Local programs can also better provide for the identification and attainment of very specific research and evaluation needs, coupled with the opportunity to enhance local university programs. This approach enhances educational and training opportunities for future utility employees and invests the revenues from our customers in the Idaho economy.

III. PROPOSED MECHANISM

Avista proposes to dedicate approximately \$300,000 per year to fund applied R&D. This funding would come from revenue collected through Avista’s Schedule 91 – Energy Efficiency Rider Adjustment. This amount would be a ceiling and not a requirement to allocate this funding in any given year. Any remaining balance (not ear-

marked) would be rolled over to a future year, and if terminated, the unallocated portion would be added back to the tariff rider balance. The process would begin by Avista issuing a "call for papers" (similar to a "request for interest"). Avista would select proposals for funding and would contract with the selected proposal's Principal Investigator (PI).⁵ A third-party project manager would be retained (similar to existing National Science Foundation protocols) to oversee the project. At the estimated 10% of the project cost, the third party project manager would monitor project milestones and be the liaison with utility staff.

"Stage gate methodology" will be used for structuring proposals and for the management of selected projects. Stage gates, common to other industries, are defined points in which a project can be assessed regarding its progress. Stage gates consist of three main elements: deliverables, criteria, and outputs. Stage gates are a logical stopping point to assess project progress against these three elements. A research proposal will require at least two stages in a year. The Principal Investigator is responsible for defining a stage gate, based on the guidelines provided in the solicitation.

The intent of this application is to provide funding to solicit customer-benefitting proposals from Idaho's research institutions. In this process, Avista does not intend to specify projects in its "call for papers." Based on previous discussions with Dr. John Gardner of Boise State University and Dr. Kevin Van Den Wymelenberg of the University of Idaho, the following areas are representative of the type of projects that may be considered:

⁵ The Principal Investigator, the lead scientist/engineer for the proposed, will be the University's primary applicant, responsible for implementation and reporting of the proposal.

Data, Information and Control

Increases in the availability of sensors and data logging devices from the Advanced Metering Infrastructure to Home Energy Networks and modern commercial building Energy Management Systems, have given rise to an unparalleled expansion of data. Commensurate expansion of useful, actionable information could employ multiple tools to help extract useful information, and suggest optimal courses of action, from increased data inventory.

Data-Driven Modeling

Data mining and statistically driven techniques may uncover useful trends and correlations. Model-based (so-called “Gray Box”) approaches have the potential to uncover useful engineering characteristics through analytical methods. For example, this approach does not require significant computational resources but has the potential for identifying the thermal characteristics of homes by examining energy consumption data.

Computational Intelligence

Researchers at the Idaho National Lab, University of Idaho, and Idaho State University are engaged in a project to provide add-on toolsets for commercial building energy management systems. Using various computational intelligence and data mining tools, they are developing algorithms to detect anomalies, create concise user alerts and increase understanding of complex energy systems.

Evaluation, Measurement and Verification (EM&V) Methodologies

EM&V, an important step for verifying claimed savings, may have the potential for improving techniques and lowering costs on a wide range of energy efficiency technologies, practices, and programs.

High Performance, Integrated Building Design Processes

Designing highly energy efficient buildings include issues related to the dynamics within the design teams, performance criteria development, demands for technical information, and owner and operator education and training. Faculty, staff and students (particularly at University of Idaho’s Integrated Design Lab) have provided technical design assistance and research support for over 500 buildings in Idaho, the Pacific Northwest and around the United States. Involvement on these projects spans both basic and applied research to outreach and education and also encompasses the full range of design, construction and hand-off and operations phases.

Human Factors: Comfort, Preference and Behavior

Energy efficiency research and practice touches a wide range of disciplines including, but not limited to, architecture, economics, engineering, psychology, and sociology. Therefore, a broad understanding of human factors is needed to meet increasing expectations of energy efficiency technologies and programs. The University of Idaho IDL team has developed expertise in human comfort evaluation and its implications on energy efficiency through laboratory studies, and field studies and case studies using both qualitative and quantitative methods.

An example of results from Avista employees monitoring R&D is the Company's efforts around grid modernization. In 2007, a feeder was modified and analyzed to determine interactive effects of new technology. Called the Demand Response and Energy Efficiency Project, this allowed Avista to be "shovel ready" for application of economic stimulus awards through the American Recovery and Reinvestment Act (ARRA). The Company received upwards of \$40 million in ARRA funding based on this work.

IV. ADDITIONAL BENEFITS

Evaluations of new and emerging technologies will better enable efficiency approaches to occur through research and development. New and emerging equipment can shape the development of program delivery. However, additional benefits should result from this initiative, as discussed below.

The number of viable electric power engineering programs nationally, has decreased to less than twenty, including the University of Idaho, which has one of the best power engineering programs in the Country. The three universities, including Boise State University and the Idaho State University, bring architectural and mechanical engineering programs to the forefront which are instrumental for electric efficiency improvement. University faculty and facilities offer a relatively untapped opportunity for our utilities to gather critical research and development to better serve our customers, while at the same time, strengthening of programs at these schools. As our Nations' electrical systems are revitalized, students should be encouraged to pursue degree programs that will support the industry.

V. REPORTING

Avista will file an annual report by March 31st for the preceding calendar year. This report will include key events during the reporting period and the accounting for related expenditures.

The key events will include, at a minimum:

- documents regarding the “request for interest” and distribution list;
- the process Avista followed for selection of projects, including Avista staff involved;
- description of the selected project(s) for funding;
- selection of the project manager and related communications;
- contract between Avista and the Principal Investigator and her/his academic institution including intellectual property, publication rights and associated issues (similar to Avista’s existing research agreements with universities);
- project milestones and related stage-gates;
- for other than first-year projects, summary of research in-progress and anticipated completion milestones pursuant to contractual agreements and project manager’s administration; and
- other, as appropriate, to inform the Commission of relevant activity.

Reporting on accounting will include:

- funds authorized for R&D projects;
- funds expended for R&D projects;
- remaining balance of \$300,000 (authorized and expended) if projects are not subscribed up to the annual cap;
- cost-recovery incurred of expended funds through Schedule 91, Energy Efficiency Rider Adjustment; and
- remaining, or accrued, balances for cost recovery as a true up.

Financial reporting will also be included in Avista’s annual Demand Side Management (DSM) Report due to the connection of both DSM and the R&D programs to Schedule 91, although the latter will not be accompanied by the traditional cost-effectiveness tests.

Avista hosts semi-annual energy efficiency Advisory Group meetings plus Webinars on current topics of public interest, attended by the Commission Staff, among

other interested stakeholders. The Company will include the R&D activity on the regularly scheduled meeting agendas.

VI. CUSTOMER NOTIFICATION

Notice to the public of the proposed revisions, pursuant to IDAPA 31.21.02.102, will be given simultaneously with the filing of this Application by posting a notice to the Company's Website at www.avistautilities.com.

VII. REQUEST

For the reasons provided above, Avista respectfully requests authorization by the Commission to fund R&D up to \$300,000 per year from revenue collected through Avista's Schedule 91 (Energy Efficiency Rider Adjustment) effective on November 1, 2013. Avista requests that this application be processed under Modified Procedure.

DATED at Spokane, Washington, this th 29 day of August, 2013.

AVISTA CORPORATION

By



David J. Meyer

Vice President and Chief Counsel for
Regulatory and Governmental Affairs